

Appln No. 10/803,380
Amdt date March 13, 2006
Reply to Office action of December 21, 2005

Amendments to the Drawings:

The attached sheets of drawings include changes to and the conversion of FIG. 3 to FIG. 3A. FIG. 3B has been added. Included are both a Replacement Sheet and an Annotated Sheet marked in red showing changes made to former FIG. 3.

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REMARKS/ARGUMENTS

The above identified patent application has been amended and reconsideration and reexamination are hereby requested.

Claims 1 - 8 are now in the application. Claims 9 - 15 have been withdrawn. Claim 1 has been amended.

The Examiner has objected to the title of the invention as not being descriptive. The Applicant has provided a new title indicative of the invention to which the claims are directed.

The Examiner has also objected to the Specification as failing to provide proper antecedent basis for the claimed subject matter. In particular, the Examiner indicates that the terms "first electrode" and "second electrode" are not supported by the instant Specification.

The Applicant submits that the terms "first electrode" and "second electrode" are supported by the instant Specification (underlining added for emphasis):

A plurality of first electrodes is provided in the row direction on the first substrate. A plurality of second electrodes is provided in the row direction on the first substrate, formed between two adjacent first electrodes. The first electrode and the second electrode face each other with a predetermined electrode gap therebetween. A sustain discharge is generated by a potential difference between the first electrode and the second electrode. An area of the first electrode is larger than that of the second electrode. (page 3, lines 1 - 7)

In another exemplary embodiment, the first electrode has a first protrusion formed in the column direction. The second electrode has a second protrusion formed in the column direction. The first protrusion and the second protrusion face each other with the predetermined protrusion gap therebetween. An area of the first protrusion is larger than that of the second protrusion. (page 3, lines 8 - 12)

A plurality of scan electrodes (Y electrodes) 10 and a plurality of sustain electrodes (X electrodes) 20 are alternately provided in the row direction on substrate 1. Protrusions 11 (11a and 11b) are respectively formed on the top and the bottom of scan electrode 10,

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and protrusions 21 (21a and 21b) are respectively formed on the top and the bottom of sustain electrode 20. Protrusions 11 and 21 of scan and sustain electrodes 10 and 20 operate for a discharge. Top protrusion 11a of scan electrode 10 and bottom protrusion 21b of sustain electrode 20 face each other with a predetermined protrusion gap 51 therebetween, and bottom protrusion 11b of scan electrode 10 and top protrusion 21a of sustain electrode 20 face each other with a predetermined protrusion gap 52 therebetween. (page 5, line 20 to page 6, line 8)

Accordingly, those skilled in the art would appreciate that the first electrodes and second electrodes performing the sustain discharge in one embodiment would be the scan and sustain electrodes.

The Examiner has also indicated that the Specification and Drawings fail to disclose that the sustain and scan electrodes are different widths.

The Applicant believes that the Examiner may have mischaracterized the sustain and scan electrode widths. The Applicant submits that Specification and Drawings (former FIG.3, now FIG. 3A) has support for an embodiment wherein the first protrusion portions of a first electrode have lengths differing from that of the second protrusion portions of a second electrode (underlining added for emphasis):

In another exemplary embodiment, the first electrode has a first protrusion formed in the column direction. The second electrode has a second protrusion formed in the column direction. The first protrusion and the second protrusion face each other with the predetermined protrusion gap therebetween. An area of the first protrusion is larger than that of the second protrusion. (page 3, lines 8 - 12)

In yet another exemplary embodiment, a column-directional length of the first protrusion is longer than a column-directional length of the second protrusion. (page 3, lines 13 - 14)

As shown in FIGs. 2 and 3, a column-directional length of protrusion 11 formed at scan electrode 10 is longer than a column-directional length of protrusion 21 formed at sustain

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electrode 20. Address discharges occur between address electrodes 110 and scan electrodes 10 in the address interval. In the first exemplary embodiment, an area where address and scan electrodes 110 and 10 face each other increases to stably generate an address discharge. As shown in FIG. 1, substantially 2/3 of the total light emission is generated at the cathode in the sustain interval. Therefore, when a voltage applied to scan electrode 10 is less than a voltage applied to sustain electrode 20 in the sustain interval, that is, when scan electrode 10 operates as a cathode with respect to sustain electrode 20, light emission is more effectively performed because the length of protrusion 11 of scan electrode 10 is long. (page 7, lines 8 - 19)

Further, the Applicant submits that the Specification has support for an embodiment wherein the first protrusion portions of a first electrode have widths differing from that of the second protrusion portions of a second electrode (underlining added for emphasis):

In still another exemplary embodiment, a row-directional width of the first protrusion is greater than a row-directional width of the second protrusion. (page 3, lines 15 - 16)

The column-directional length of protrusion 11 of scan electrode 10 is increased in the exemplary embodiment, and further, a width of protrusion 11 can be greater than that of protrusion 22 of sustain electrode 20, and an area of protrusion 11 can be greater than that of protrusion 21. (page 7, lines 20 - 24)

The Applicant has added FIG. 3B to show the row-directional width of the first protrusion being greater than a row-directional width of the second protrusion as described above and claimed in Claim 4.. No new matter has been added in view of the above disclosure as set forth in the Application as filed.

The Examiner has objected to the Drawings as not showing every feature of the invention specified in the claims, in particular, the plurality of second electrodes formed between two adjacent first electrodes.

The Applicant has accordingly amended Claim 1 to call for (underlining added for emphasis) ... a plurality of second electrodes provided in the row direction on the first substrate,

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a second electrode being formed between and common to two adjacent first electrodes, a first electrode being formed between and common to two adjacent second electrodes. No new matter has been added, noting a second electrode 10 between and common to two adjacent first electrodes 20, and a first electrode 20 between and common to two adjacent second electrodes 10, as shown in FIG. 2.

The Examiner has also noted that the size relationships and structural details of the electrodes in FIG. 3 are difficult to decipher and has encouraged the Applicant to amend FIG. 3 for proper understanding of the subject matter sought to be patented.

Accordingly, the Applicant has enlarged amended FIG. 3A and new FIG. 3B and has shown address electrodes 110 as hidden (dotted lines) behind electrodes 10 and 20 including their respective protrusion electrodes 11a, 11b and 21a, 21b. Appropriate corrected formal drawings will be provided upon receipt of a Notice of Allowance.

The Examiner has rejected Claim 1 under 35 U.S.C. §102(b) as being anticipated by both Hirose and Sano. The Examiner has also rejected Claims 2 and 5 - 8 as being anticipated by Hirose. The Examiner has further rejected Claims 3 and 4 under 35 U.S.C. §103(a) as being unpatentable over Sano in view of Hirose.

The Applicant's amended Claim 1 calls for (underlining added for emphasis) ... a plurality of first electrodes provided in a row direction on the first substrate; and a plurality of second electrodes provided in the row direction on the first substrate, a second electrode being formed between and common to two adjacent first electrodes, a first electrode being formed between and common to two adjacent second electrodes ... an area of the first electrode is larger than that of the second electrode. The Drawings clearly show that the first electrode and second electrode respectively include both a bus electrode and a plurality of protrusion electrodes extending from the bus electrode. Accordingly an area of a first electrode includes collectively the area encompassed by both the first electrode's bus electrode portion and the first electrode's protrusion electrodes portion. Similarly, an area of a second electrode includes collectively the area encompassed by both the second electrode's bus electrode portion and the second electrode's protrusion electrodes portion.

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Claim 1 is clearly supported in the Specification as noted below (underlining added for emphasis):

A plurality of first electrodes is provided in the row direction on the first substrate. A plurality of second electrodes is provided in the row direction on the first substrate, formed between two adjacent first electrodes. The first electrode and the second electrode face each other with a predetermined electrode gap therebetween. A sustain discharge is generated by a potential difference between the first electrode and the second electrode. An area of the first electrode is larger than that of the second electrode. (page 3, lines 1 - 7)

In another exemplary embodiment, the first electrode has a first protrusion formed in the column direction. The second electrode has a second protrusion formed in the column direction. The first protrusion and the second protrusion face each other with the predetermined protrusion gap therebetween. An area of the first protrusion is larger than that of the second protrusion. (page 3, lines 8 - 12)

A plurality of scan electrodes (Y electrodes) 10 and a plurality of sustain electrodes (X electrodes) 20 are alternately provided in the row direction on substrate 1. Protrusions 11 (11a and 11b) are respectively formed on the top and the bottom of scan electrode 10, and protrusions 21 (21a and 21b) are respectively formed on the top and the bottom of sustain electrode 20. Protrusions 11 and 21 of scan and sustain electrodes 10 and 20 operate for a discharge. Top protrusion 11a of scan electrode 10 and bottom protrusion 21b of sustain electrode 20 face each other with a predetermined protrusion gap 51 therebetween, and bottom protrusion 11b of scan electrode 10 and top protrusion 21a of sustain electrode 20 face each other with a predetermined protrusion gap 52 therebetween. (page 5, line 20 to page 6, line 8)

As such, the Applicant submits that Claim 1 is not anticipated by either Hirose or Sano under 35 U.S.C. §102(b).

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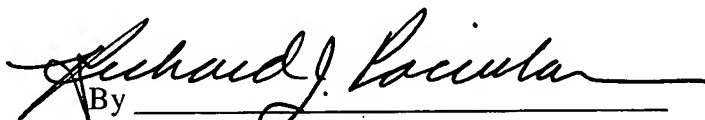
Hirose and Sano, while providing for plasma display panel electrodes and having protrusion electrodes of differing size, they do not describe, teach or suggest that the area of the entire first electrode is larger than that of the entire second electrode.

Accordingly, the Applicant submits that Claim 1 is not anticipated by Hirose or Sano under 35 U.S.C. §102(b).

Claims 2 - 8 are dependent on Claim 1. As such, these claims are believed allowable based upon Claim 1.

Therefore, in view of the above amendment and remarks it is submitted that the claims are patentably distinct over the prior art and that all the rejections to the claims have been overcome. Reconsideration and reexamination of the above Application is requested.

Respectfully submitted,
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FIG. 3A

